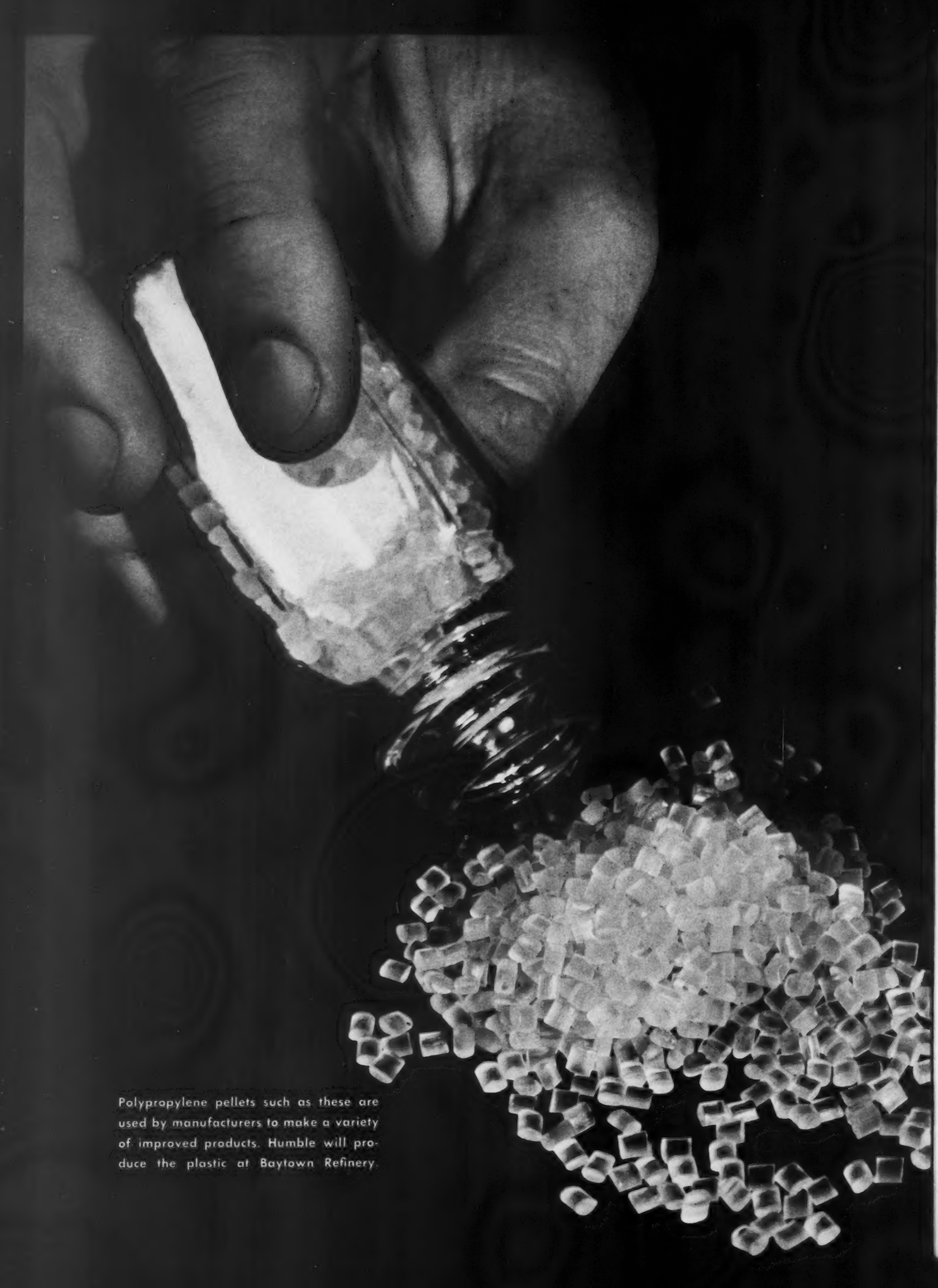
The Store at Choupique Bend (Selected from Humble Employee Art Exhibit) *By Robert M. R. Peale*

The Humble Way

JANUARY-FEBRUARY, 1960



Polypropylene pellets such as these are used by manufacturers to make a variety of improved products. Humble will produce the plastic at Baytown Refinery.

The Humble Way
JANUARY-FEBRUARY, 1960
Vol. XV No. 5

VINDICATION AT TULSA

ON FEBRUARY 13, in a federal court at Tulsa, Oklahoma another oil industry milestone was passed.

Twenty-nine companies, including Humble Oil & Refining Company, were pronounced innocent of the charge of conspiring "to raise, fix and stabilize prices of crude oil and automotive gasoline in late 1956 and early 1957."

The charge against the companies had its inception on May 29, 1958, the final day of an 18-month Grand Jury investigation at Alexandria, Virginia, on practices in the oil industry.

Over the 21 months between the Grand Jury charge and the opening of the trial in Tulsa elaborate preparations were made by the Justice Department. More than one million documents were subpoenaed from oil company files. Government prosecutors filed a 291-page bill of particulars and a 501-page pre-trial brief. For seven and one-half trial days they presented their case, then rested.

Two days later, on February 12, United States District Judge Royce H. Savage began hearing arguments by the defendants on motions for acquittal. On Saturday afternoon, February 13, without hearing any testimony from the defendants, Judge Savage brought the trial to a close.

In giving his opinion Judge Savage said: "It is my judgment that the evidence in the case does not rise above the level of suspicion . . . I think I should go further and say that, after giving consideration to all this evidence, I have an absolute conviction personally that the defendants are not guilty of the charge made in this case. I do not have to go that far to decide these motions. I could dispose of them upon the theory that the burden is on the government to establish guilt beyond reasonable doubt, and that if the evidence is as consistent with the hypothesis of innocence as that of guilt, then the motions (for acquittal) should be sustained, but I really do not hesitate to go further and say that I have a firm conviction, upon the basis of this record, that there was not an unlawful agreement entered into by these defendants to increase the price of crude or products prices."

Because Humble Oil & Refining Company was the first company to announce the crude oil price increase on January 3, 1957, Judge Savage pointed out that it was apparent to him that the increase hinged primarily on Humble's position. "Humble took the lead in announcing this price increase," he said, "and I don't believe we get a true picture of the situation by looking to the status of the crude stocks collectively. Humble had an export demand in January (1957) of 5.5 million barrels. They were in position to supply 1.2 million of them, I believe, and 600,000 of that was oil carried over from the preceding month, which they had not been able to deliver because of tanker shortage. So, certainly there was terrific economic pressure on Humble to increase the price of crude oil, and Humble was the first to make a move. Now, there isn't any evidence here, in my judgment, which would warrant a conclusion that Humble discussed this price increase with any person . . ."

Presidents of companies involved had promptly denied the charges after Grand Jury indictments in May 1958, and complete vindication in Tulsa was hailed by these same leaders as the expected outcome.

Daily newspapers and trade journals supported the court decision with vigorous editorials within days after the case was closed.

The Tulsa case marked the fourth time within the last three years that segments of the industry have been forced to defend themselves against charges which were proved to be without foundation in the ensuing judicial procedings.

There was the Arapahoe Pipe Line case, which was dismissed by the District Court in 1958. On June 8, 1959, the Supreme Court upheld the dismissal.

Then there was the California case, brought against major oil suppliers, in which the Government asked for divorcement of all retail marketing operations. The Judge rejected the idea of marketing divorcement as being a drastic action with no showing that there would be any public benefit resulting from it. This case was settled by a consent decree which did little more than re-state existing principles of law applicable to petroleum marketing.

And then there was the South Bend case, in which a Grand Jury handed down an indictment against suppliers in a South Bend, Indiana, price war situation. This indictment was dismissed in July 1958, but a new indictment was returned in October 1958, and the case is still pending.

Thus, in four cases brought against segments of the petroleum industry in recent years the courts have found the industry innocent of charges in three, and one is still pending.

Looking over King Ranch Gas Plant are C. E. Reistle, Jr., and Eugene Holman.

Automatic lease production facility is examined with interest by members of the touring party, including Humble board members E. Duer Reeves (left) and William Naden (center).

At Southwest Texas drilling site, Ray Horton chats with driller Roy Meyer, Sr.

Company directors and other management representatives see Humble Division operations in a tightly-scheduled . . .

EXECUTIVE

In group visiting King Ranch Gas Plant were (left to right) Humble's C. E. Reistle, Jr. and William Naden, the King Ranch's Robert Wells, and Jersey Standard's Eugene Holman.

FOR two weeks in January, several members of Humble's board of directors, together with various executives of the Humble and Carter Divisions, took part in a 3,000-mile tour of Humble Division operations in Texas, Louisiana, and southeastern New Mexico.

In the course of this trip, they had the opportunity to meet hundreds of Area, District, and field employees; to visit numerous key installations and operations; and to hear discussions covering a wide variety of the Division's activities.

Taking part in one or more phases of the two-week field trip were: C. E. Reistle, Jr., and William Naden, executive vice presidents of the Company; and H. W. Haight and E. Duer Reeves, vice presidents. They were accompanied by Ray H. Horton and

Day-long meetings were held at Area offices throughout the tour; here Vice President H. W. Haight speaks at the session in New Orleans.

Visiting seismic survey site in New Mexico, members of the group discussed operation with crew members and witnessed seismic shot.

At Duck Lake Field, in southern Louisiana, the touring party saw gas compressor station and other facilities on platforms above swamp.

At Hawkins, during bus tour of the Company's East Texas operations, members of the party examine cores from various wells in the area.

FIELD TOUR

other Humble Division executives, and by two members of the board of management of the Carter Division: C. G. Herrington, executive vice president, and M. W. Haas, vice president. A special guest for one day of the tour in Southwest Texas was Eugene Holman, chairman of the board of Standard Oil Company (New Jersey).

The schedule for the trip alternated between day-long meetings in the various Area offices and extensive all-day visits to the field. Among the operations and installations visited were the new King Ranch Gas Plant, where some 500 construction workers are aiming at a mid-summer completion date; the modern Ector Station of Humble Pipe Line Company; drilling rigs at both offshore and onshore locations; and a geophysical survey being carried on by a seismic exploration party in the vicinity of Hobbs, New Mexico.

In Louisiana, the executive group visited marshland, swampland, and offshore operations, including a brief stopover at the Freeport Sulphur Company's huge offshore plant which is now nearing completion.

Day-long meetings at Area headquarters in Corpus Christi, Midland, Wichita Falls, Tyler, and New Orleans afforded the group opportunities to hear first-hand reports from local personnel on such matters as water-flooding, automated lease production and storage facilities, pipe line modernization, and new developments in oil producing techniques.

In exchange, the visiting executives also gave short talks at the meetings. Mr. Naden cited the progress made toward reducing costs and emphasized the importance of the Company's taking full advantage of investment opportunities. Mr. Haight said he was impressed by the opportunities remaining for further growth in the Humble Company. He pointed out that the recent merger has opened broader vistas and wider opportunities for Humble employees generally. Mr. Reeves also touched on the merger, saying there would be no change just for the sake of change.

Ray H. Horton, president of the Humble Division, told Area executives that the Division's two main objectives should be to improve efficiency in all phases of operations, and to improve the Division's cost position so it could get the best possible return on its investments.

Humble's directors plan to make similar field trips in other Divisions of the Company in the near future.

Control panel is the brain of Humble Division's two-place chassis dynamometer while brawn is housed in pit beneath test cars. With assist from magnetic tape equipment, technician is able to duplicate varied traffic maneuvers of auto during actual road workout.

Road Testing WITHOUT A Road

New mileage accumulation dynamometer at Baytown Refinery offers improved method of evaluating fuels, lubricants

A RECENT visitor at Baytown Refinery was puzzled by this strange sight: Two driverless cars sitting side by side on a concrete slab, their engines racing wildly and their rear wheels a spinning blur. Both vehicles seemed to be straining for an imaginary finish line, but neither car moved forward a single inch. Nearby in a small building with a big glass window, a man (who could have been doing something to stop it all) sat calmly watching.

Runaway cars on a highway that goes nowhere? It could have been a traffic officer's nightmare, but it is instead an automated treadmill called a Mileage Accumulation Dynamometer. This complex new installation will enable Humble research scientists to better evaluate engine performance of automobiles using experimental motor fuels and lubricants. It may help them solve a great many other product quality research problems, too.

The Mileage Accumulation Dynamometer—or MAD unit, as engineers abbreviate it—accommodates two unmanned cars, both of which can be "driven" simultaneously by one man in the nearby control house. Thus, for some types of engine tests, it is now possible to do road testing without a road. R. S. Manne of Refining Research and Development, head of the project, puts it another way: "With this new outdoor laboratory, we're running the highway by the car.

Humble's chassis dynamometer, located in the shadow of Baytown Research Center, went into service last month. The unit is a little brother to the eight-car treadmill built at Linden, New Jersey, by Esso Engineering and Research Company in 1958. In addition to basic mileage accumulation work, the unit will be used by Humble researchers to learn more about octane rating, octane requirements, and to study such things as the problems of vapor lock and the effects of auto air-

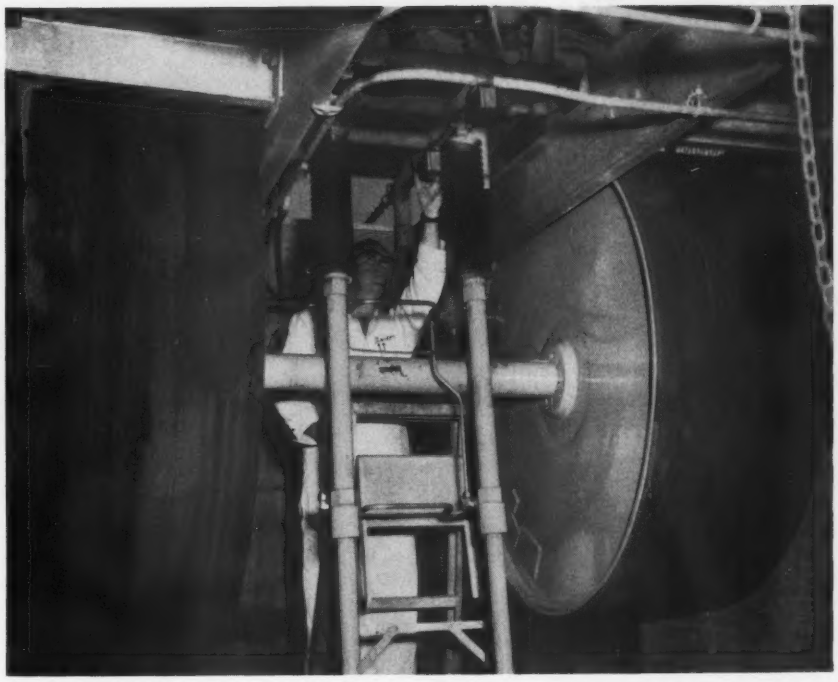
conditioning on engine performance.

Duplication of actual road tests on the mileage accumulation dynamometer is possible with the use of conventional magnetic tape recording and playback equipment. To make a tape, a test driver puts a car through the paces over a typical road run. While he drives, every movement of the accelerator and brake is converted into an electronic impulse and is recorded on tape. Played back on the master unit, the tape renders an exact duplication of the way the motorist started, accelerated, slowed down, and stopped the car.

In time the Baytown research group will build up an extensive library of different types of drivers and driving conditions. A variety of tapes will reflect an over-all typical driving pattern for more accurate testing of gasoline and oils.

In enabling test cars to log miles while standing still, the new MAD unit employs a method of absorbing the engines' power output. The vehicles' rear wheels ride on and rotate wide steel drums, which are belted to "inertia discs" and large fans. The inertia discs absorb the power an automobile would normally use to accelerate its weight along a conventional road. (The discs, by the way, are adjustable to correspond to the road weights of any car.) The fans absorb the power the car would ordinarily expend in overcoming wind resistance on the open road; they also serve the practical purpose of cooling the engine of the test car.

Inertia discs impose load on car's engine; number of discs varies with weight of car.



Huge steel drums, located underground, are rotated by car's wheels during testing; beforehand, Operator C. W. Gordon positions vehicle on automated treadmill with hydraulic jack.

Stationary road testing in this way offers several advantages. For one thing, it provides more accurate test information than is obtained from conventional road runs in that fuels and lubricants can be compared under unvarying conditions, thanks to the magnetic control tapes. The tapes can be used over and over to reproduce exactly the same engine patterns; even the best test driver would not be able to repeat the same traffic maneuvers day after day.

Safety is another important factor. The new unit enables the Company's automotive specialists to run vapor lock and transmission tests at speeds up to or above 100 mph. There has been no available safe place to drive a car that fast in road tests. Many ordinary safe driving practices were necessarily violated due to rapid acceleration and rapid braking. In addition, certain tests called for the test driver to operate the vehicle, listen for pings and knocks, and note instrument readings all at the same time.

A Company test driver had a real scare a few years back when a new gasoline additive was being tested. He had been making 20 to 60 miles-per-hour acceleration tests in a rented car, and had stopped briefly for refueling. Suddenly as the car stood still, a tire blew out. Had it happened at 60 miles an hour, a tragic accident might have resulted.

On the MAD unit, if a tire goes flat, or other trouble develops, the car's engine will automatically cut itself off. Another safety feature of the unit developed by Humble is a special exhaust fan to draw off possible fumes from the underground pit each morning before testing is begun.

All in all, the MAD unit combines efficiency and economy, freeing Research and Development technicians for other research activities. Under the old system, it might require half a day just to make preparations (fuels, for example, had to be packed in ice to prevent evaporation) and get to the test site. By way of comparison, a test car can now be clamped into position on the treadmill and be ready to roll in less than 10 minutes.

Progress through research is expensive, of course, but it benefits everyone. The development of this dynamometer installation for test fleet operation is another example of the continuing efforts being made by research groups throughout the oil industry today to bring better fuels and lubricants to consumers of petroleum products.

Off-duty cook for offshore drilling crew turns fisherman and proudly displays part of his catch. Fishing is popular pastime for crewmen during off hours.

STEEL ISLANDS LURE FISH

OFFSHORE platforms, built to keep oilmen's feet dry while they probe for oil sands under the ocean floor, are performing an additional service for which they were not intended. The steel-legged islands are luring fish by the thousands to water areas they once ignored.

For years, salt water fishermen in Louisiana and Texas waters have known that platforms help fishing in the Gulf of Mexico. Now California has come up with scientific proof of their effect on angling in Pacific coastal waters.

The California Department of Fish and Game recently completed a survey of marine life before and after platforms were erected in an area offshore from Mussel Shoals and Summerland, a short distance up the coast from Los Angeles.

In early 1958, before platforms entered the picture, divers explored the area and reported that it was a "marine desert," completely devoid of marine life. On their return trip last summer, some months after steel islands appeared in the area, the divers found more than 93,000 fish of at least two dozen species. Mackerel, perch, sand bass, and other game fish were among those counted.

Experts explain that small fish ignore watery wastes that do not provide two things fish need to survive: food and a hiding place. Big fish will not stay there either, of course, without small ones to feed on. When oilmen build their platforms, small fish find food, in the form of barnacles, growing on the steel legs, and in the form of plants, sprouting on the ocean floor around them. For shelter, the small fish find piles of rock chips, ground out of formations below by drill bits and spewed out under the water. Also the structures cast shadows that make hiding easier.

Big fish come to search out the small ones, and fishermen are seldom far behind.

Scores of fish dot surface of waters around oil platform off coast of Grand Isle, Louisiana. They represent only small portion of thousands of fish lured by structures.

Hooked and gaffed, a giant ling continues to struggle as a pair of sport fishermen try to haul him aboard their boat, anchored near platform off South Texas coast.

Jack mackerel congregate under landing float of Standard of California-Humble platform near Summerland. Before platforms were built, these waters were barren of marine life.

School of perch glides around drill pipe in water beneath Standard of California-Humble drilling platform off Summerland, California. Underwater photograph was made 40 feet below surface by divers surveying fish population.

Al Kaeppel, right, holds prize-winning painting for art show judge George Shackelford. Kaeppel is 1960 president of Houston Humble Club Art Group.

PAINTING FOR FUN

Humble's part-time artists show 103 works in Art Group's Fifth Annual Invitation Exhibit

HOW many times, coming upon a scene of impressive beauty, have you wished for the ability to paint a picture that would capture the magic of the moment forever?

For some Humble employees, wishing is not enough. When they feel the urge to paint a picture, they paint it. In fact, they spend a considerable amount of their spare time studying and practicing creative art—and they enjoy every minute of it.

But artists—even spare-time artists—like for their works to be seen and appreciated by others. Therefore, each year in Houston, the Humble Club Art Group sponsors a public exhibit in which Humble's part-time painters and their wives and husbands are invited to show examples of their work.

The Art Group's Fifth Annual Invitation Exhibit was held last October 19-31 at Foley's Town Hall in downtown Houston. Participating in the show were 46 employees and wives and husbands of employees representing nine cities and towns in four states. They entered a total of 103 works of art, divided into three categories: Oil Paintings; Water Colors-Prints-Drawings; and Crafts.

Judges for the show were Louis Blackburn, George Shackelford, and Chester Snowden—all well-known Houston artists. They awarded first prize in the Oil Paintings division to Al Kaeppel, assistant chief draftsman in the Scouting Division, for his "Deer Lake" landscape (see centerspread). Mr. Kaeppel has been a consistent prize winner in the Art Group's annual exhibits.

First prize in the Watercolors-Prints-Drawings Division of the exhibit went to Mrs. Trudy Coody of Midland for her painting of "Yucca Pods." She is the wife of Gilbert Coody, a geologist in the Humble Division's Western Area.

In the Crafts Division of the show, first prize was awarded to T.R. Northrup for an abstract work titled "Non-Objective Noise." Mr. Northrup, a student in architecture at the University of Houston, is the husband of Mrs. Mary Jo Northrup, Humble employee in the statistical evaluation section of the Geologic Division.

For a cross section of the various works exhibited in the show, THE HUMBLE WAY has selected the paintings reproduced on the following four pages and the front cover.

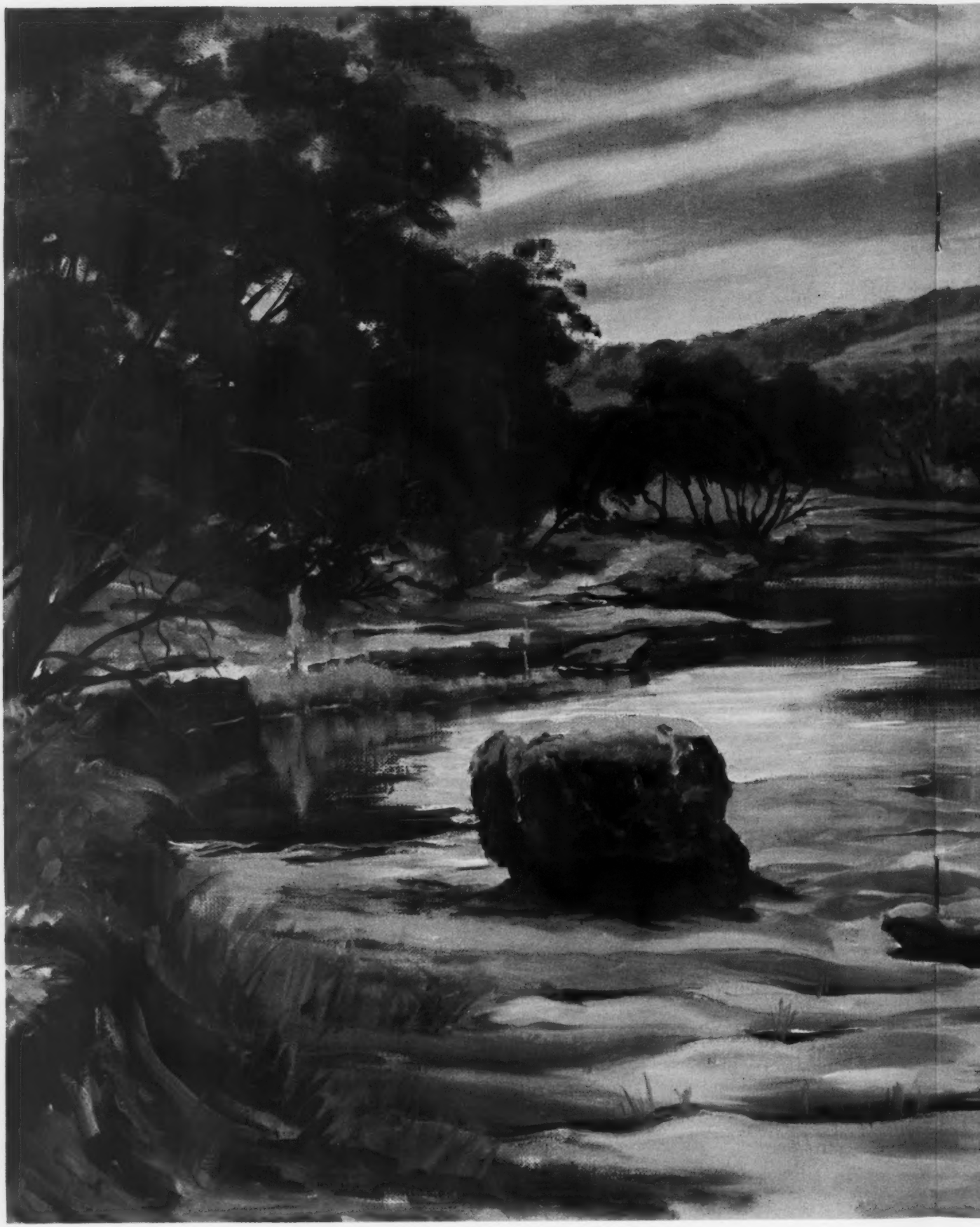
Examining Crafts Division prize-winning entry are, left to right, Chester Snowden, judge; Charles Becker, 1959 Art Group president; judges George Shackelford, Louis Blackburn.

After the Rain

. . . a watercolor painting by Charles Becker of Houston, draftsman in the engineering section of Humble Pipe Line Company. He was president of the Houston Humble Club Art Group in 1959.

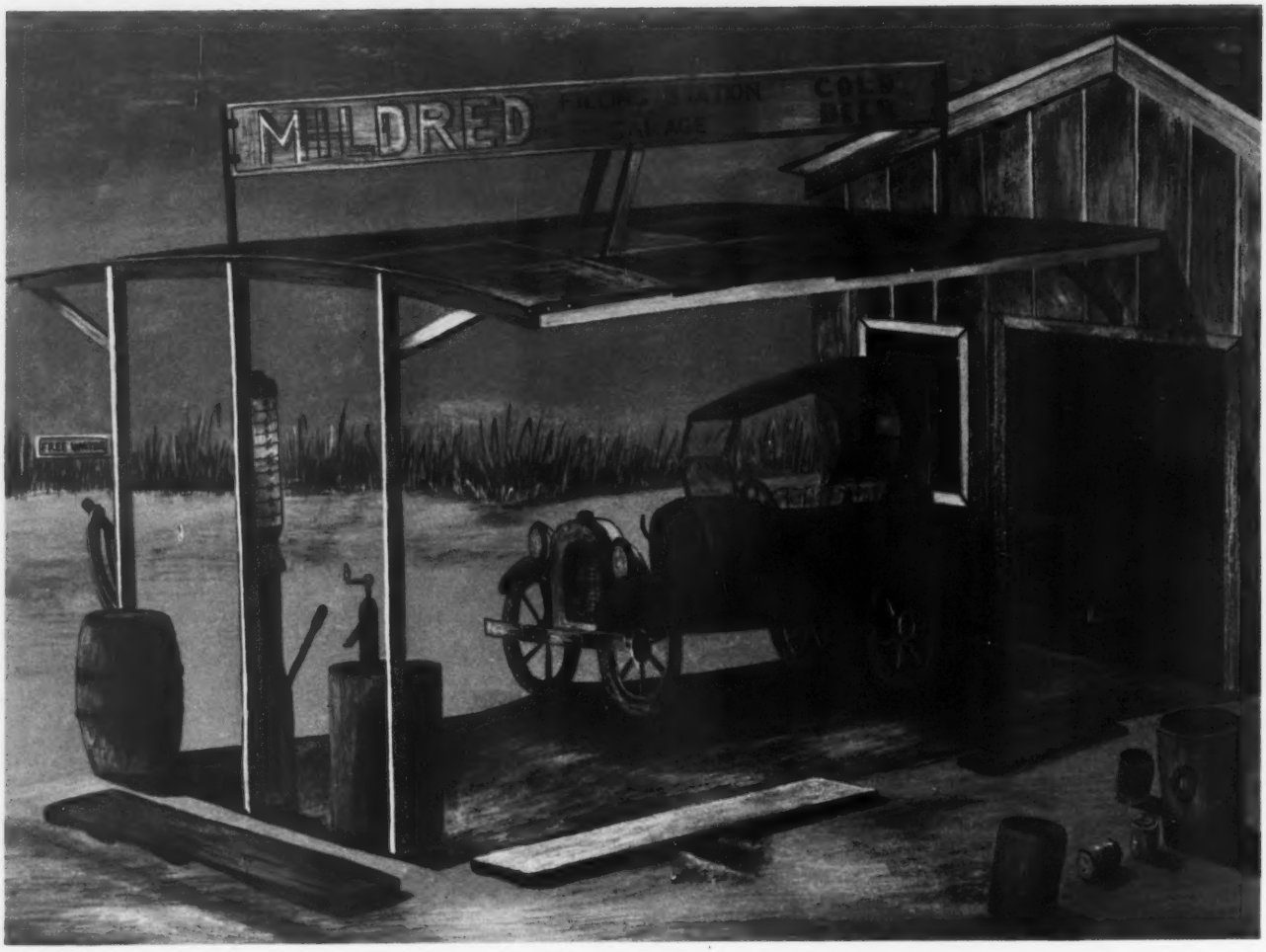
Oriental Olio

. . . an oil painting by Mrs. Pat Boyles, secretary in the Law Department, Houston.



Deer Lake

Al Kaeppel



EARLY COUNTRY STATION

. . . a watercolor painting by Charles R. Head, draftsman in the Gulf Coast Area, Exploration Department. This painting, based on an old photograph, won second place in the watercolor division.

CONFLUENCE

. . . an oil painting by Mrs. Verna Tag, wife of Baytown Refinery employee L. R. Tag. This painting received Honorable Mention in show.

NEEDED: Original Thinkers

Experimental idea stimulation program in Humble Division points up far-reaching benefits of creative effort

IN the early 1950s, a well-known magazine writer tackled the formidable assignment of finding out what makes the modern oil industry tick. A flying reporter, he combed 6,000 miles of Gulf Coast oil country. He visited drilling rigs, pipeline stations, refineries, research centers, and service stations. He talked with oilmen ranging from roustabouts to company presidents.

In the mass of information the writer's research turned up, one fact overshadowed all others: *Ideas make the oil business go.*

An idea gave birth to the industry, of course. Ideas have powered the wheels of its progress in the 101 years since. When Col. Edwin Drake couldn't obtain sufficient quantities of oil from the springs at Titusville, Pennsylvania, he or one of his associates had the *idea* of drilling for the dark liquid. Later at Spindletop, Curt Hamill solved the problem of well cave-ins with his *idea* of pumping mud into the hole. Today, modern oilmen are flirting with such astonishing *ideas* as drilling wells with sonic waves and triggering subsurface atomic blasts to release petroleum in the earth's depths.

More and more, American business and industry are recognizing the all-importance of conscious creative effort. By and large, competition cannot exist without innovation. Today's highly competitive oil industry needs creative thinking as never before. It needs original ideas that will produce efficient operations and greatly advanced techniques in all phases of the business. New ideas can keep the industry competitively healthy and able to meet the expanding energy requirements of the future.

The big question is: How do you get people to think creatively? A few colleges and universities are beginning to offer courses in ideation. Some industrial concerns have pioneered programs to discover and encourage the person with a special talent for originality. As a recent example, experimental work in Humble Division's Production Department indicates that the stimulation of employees to dig deeper into their minds can produce notable results.

Ideas, research, creative thinking: To many of us these terms conjure up visions of bearded scientists performing mysterious experiments with expensive apparatus in large, elaborately-equipped laboratories. The world too often fancies the inventor as an absent-minded gadgeteer who spends all his time in a dingy workshop trying to build a better mouse trap.

"Research isn't a physical thing at all," Charles F. Kettering, the great automotive genius, once said, "but just a state of mind. It is a simple, organized way of trying to accomplish something you wish to do—so simple that anyone can do research anywhere at any time." On another occasion, Kettering defined an inventor as a fellow who doesn't take his education too seriously.

Everybody, in other words, is capable of doing a better job of thinking in his job or profession—of finding new and improved ways to perform workaday duties. Every person has, to some extent, a God-given talent for original thought and the generation of an idea that no other living person can produce. Someone has said that ideas are what America is made of. Certainly, our present standard of living could never have been reached without

". . . All progress, all success, springs from thinking."

– THOMAS EDISON

thinking of a highly original nature.

The Production Department's original thinking program was developed in an attempt to create an atmosphere for specific people in which ideas are really welcome, to develop more mature minds and personalities at various levels through the organization, and to increase the useful content of formal idea programs and other expressions of original thinking.

Its primary practical goal is to improve the quantity and quality of thought occupying the minds of the 5,000 people of the department. The experience and judgment of these Humble employees are assets which could hardly be purchased on the open market. Each man and each woman of the 5,000 is in a unique position to be making some occasional suggestions of an original nature. Any who are not are robbing themselves of job satisfaction and Humble is losing the benefit of their important innovating capacities.

Since the latter part of 1956, the Production Department has developed and tested several new methods to stimulate original thinking. Two of the methods are—and there is nothing really startling about them—(1) talks that challenge, for medium-sized groups, and (2) confidential conferences on original thinking for four-man groups.

Talks That Challenge

The talks require some 30 minutes to two hours, and are designed to deliver a mental shock or a challenge of concepts to engineers, technical employees, and similar groups. They stress the need for new ideas, break down some of the barriers to creativity, and inflict an itch in the region of the imagination that must be scratched. One is called "The Power of Concept." Another is "The Importance of Innovation in Competitive Industry."

The visual aids that accompany the talks never fail to arouse special interest. A series of graphs, for instance, traces the recent decline of American invention in a period when, strangely, U. S. education has all but wiped out illiteracy. *Fact:* The U. S. peak in issued patents came in 1932, almost 30 years ago. U. S. patent issues per capita peaked in 1917, and have fallen off 45 per cent since. *Fact:* The country's best 10-year period for major inventions (such things as the oil pipeline, Pullman car, universal milling machine) was a century ago, 1855-65. *Fact:* The U. S. is not winning its share of Nobel prizes for important scientific discoveries. In the 25-year period 1927-53, several European countries outstripped the United States on a per capita basis. Little Switzerland, for example, had four times its quota while the U. S. was winning only 80 per cent.

The thought-provoking lectures were written and presented by Mercer H. Parks, chairman of the Production Department's Coin-Your-Ideas and Patent Committees and pilot of the original thinking program. They have been heard by company groups and by non-company engineers and supervisory groups from Shreveport, Louisiana, to Los Angeles, California; and from Corpus Christi to East Texas. Recently they were added to the agenda of Humble Division's Reservoir Engineering and Production Engineers schools. One has been published in a technical journal.

Four-Man Conference

The four-man conference on original thinking requires four to eight hours and the voluntary participation of employees with similar jobs and equal rank. Discussion takes place on a completely confidential basis and in a spot well insulated from everyday crises—a hotel sitting room, for example, with easy chairs, a large coffee pot, and a relaxed, kick-off-your-shoes atmosphere conducive to meditation and well-considered frank statements.

Basically, the conference consists of two parts: (1) First, a 10-minute briefing on the simple economics of the oil business; this stresses the need to produce every possible legitimate dollar of income and cut every unnecessary cost dollar. (2) A prepared series of questions designed to meet the objectives set for the conference; in general, the questions encourage the conferees to look at every detail of their jobs to determine if they are doing it in the best possible manner—or simply the way they learned it 10 or 20 years ago.

To get the session going, the moderator leads the four men to talk easily about off-the-job things which interest them most—hobbies, families, sports, politics. Then discussions shift gradually to jobs. By the end of the day, the men will probably be analyzing the way they make important job decisions. In between, the moderator keeps the discussion moving and, when necessary, steers it back toward oil company problems.

The first four-man conference was held at Corpus Christi in 1957 with district superintendents as conferees. From it stemmed one significant result: the suggestion for streamlining the Coin-Your-Ideas Plan now in effect in the whole Humble Division. The time for handling ideas in the Production Department has been shaved an estimated 50 per cent. Most awards are paid within a few weeks of an acceptable suggestion, and at least a thousand hours of supervisory time per year are diverted from unnecessary C-Y-I committee meetings to more useful work.

In the Western Area, the second conference of district superintendents was conducted late in 1957. As a result, the Snyder District asked for the four-man conference with gangpushers, pumpers, and clerks. By the beginning of 1959, these sessions on original thinking had been extended to assistant district chief clerks, attended jointly by men from Andrews and Snyder, and then to the eight farm bosses of the two districts. Altogether, eight field experimental conferences have been held with six different job groups.

The four-man conference is apparently a Humble innovation. And while there's nothing magic about it, it seems to have certain advantages over the idea-producing technique popularly known as "brain-storming." Brainstorming—which Humble has also used experimentally—is best suited for short-range, specific problem solving. The four-man conference attacks more fundamental and complex problems by combining some of the merits of both group and individual thinking. Be-

Relaxed setting of four-man conference induces employee to think hard, talk freely of ways to do field job better.

cause of the limited number of conferees, each man has the chance to speak himself out on the subject; the moderator strives to secure free expression from even the most timid conferee.

"The four-man conference could go far in developing high personal performance on all jobs," says Mercer Parks. "At these conferences, we can talk *with* people instead of *at* them. We can *convince* them in some cases where we once only *confused* them. And some of them we can *commit* to action."

What about results?

The fruits of the Production Department's original thinking campaign can best be gauged by two yardsticks—the Coin-Your-Ideas Plan, and the patent memoranda submitted by technical, supervisory, and management employees. If the experimental work actually stimulated thinking, there should be evidence of it by submissions through the two formal idea systems.

There was. In 1958, the Production Department suggestion submissions jumped 70 per cent; this was due partly to company-wide promotional work and partly to the stimulation efforts. But the increase in the Western Area, where the majority of the four-man conferences met, was much greater —205 per cent. And the Snyder District, which participated in some fashion in seven of the eight conferences on original thinking, showed a 1958 improvement of 2,200 per cent—from one idea to 23!

For more personal evidence, take the case of a Humble engineer in the Gulf Coast Area. He is non-typical, but significant because he illustrates what can happen in a favorable climate for invention. The engineer joined the Humble Company in 1945. By 1949, he had the feel of his job and that year submitted seven patent memoranda. In 1950, he once again turned in seven ideas. Then something happened: From 1953 to 1957, he submitted only five patent applications; somehow, he had lost interest in innovation.

In August of 1957, he was exposed to his department's original thinking program. After hearing "The Power of Concept" presentation, he told Mercer Parks he intended to resume his creative work on its former scale. Result: In 1958, he had a part in 19 patent memoranda and last year figured in 14 more.

Throughout its development, the experimental original thinking program has been a purely voluntary pursuit. Some of the engineers, sparked to broaden their knowledge and flex their imaginations, have set up regular reading programs. One engineer raised eyebrows among his co-workers when he secured and mastered a copy of a noted work on mysticism. Another contract employee, perhaps a bit more practical minded, posted a list of "Things To Think About While Shaving" over his bathroom mirror.

While there is little doubt that a program of thought stimulation benefits all concerned, it is difficult to place a dollar tag on it. Evidence of its value must flow from such examples as the employee who decided to propose a worthwhile change in rig operations, a production engineer who found the incentive to submit his ideas, and a roustabout gang that develops joint Coin-Your-Idea suggestions as a part of conversation on the job. These employees have assumed the dignity of individuals instead of anonymous cogs in a machine, doing merely the minimum required of them.

As Thomas Edison, the most prolific American inventor who ever lived, once said: "The man who doesn't make up his mind to cultivate the habit of thinking misses the greatest pleasure in life. He not only misses the greatest pleasure, but he cannot make the most of himself. All progress, all success, springs from thinking."

PINPOINTING THE

With improved subsurface flowmeter, oil men can tell, within a foot or two, where oil or gas is entering a well's perforations

Preparing to make a flow survey deep inside a producing oil well, a research engineer slips flowmeter into lubricator arm at wellhead. Note pleated rubber packer on shaft.

IN A West Texas oil field a few months ago, the flow of oil from one of Humble's producing wells fell off abruptly, and the well began to make excessive quantities of gas.

The trouble, Humble's production men knew, was caused by unwanted gas finding its way into the well bore. But where, exactly was the gas coming in? They needed to find the answer to that question before any corrective measures could be taken.

First, the trouble-shooting crew tried to locate the point of gas intrusion by lowering a temperature gauge into the well, hoping to detect a change in temperature that would indicate where the gas was entering. When that attempt failed, they decided to try a new type of instrument—a *subsurface flowmeter* which Humble's Production Research Division had recently perfected after several years of development.

This flowmeter is a long, tubular instrument which looks something like a blunt-nosed, slightly overweight javelin with a rubber bladder impaled about midway of its shaft. It is designed to be lowered into a well on a wire line, and to measure accurately, in intervals of a foot or two, the flow of liquids or gas at any level. In the case of our problem well, the flowmeter quickly pinpointed the spot where gas was intruding; a workover crew promptly isolated the offending perforations from the flow stream, and the well returned to normal oil production.

THE incident of the West Texas problem well is but one example of the varied usefulness of Humble's improved subsurface flowmeter. In the short time since the instrument emerged from its development stage, it has proved many times to be an excellent diagnostic tool in the treatment of ailing producing wells.

But that is not its sole purpose. In fact, its developers predict that the flowmeter's most important role in the future will be in providing needed reservoir information through routine

FLOW BELOW

flow surveys. Reservoir engineers see the instrument as a means of filling in some of the blind spots in their studies of the complex subsurface storehouses from which oil and gas are produced.

In one oil field, for example, a survey conducted with the new flowmeter confirmed existence of a condition which had only been suspected. In several of the wells where 40 or more feet of casing had been perforated, the entire production of fluid was found to be coming from a thin interval of about a foot or two. There had been no proof, prior to the flow survey, that these wells were not producing from the entire perforated intervals.

USE of the flowmeter in field surveys is also helping Humble's production men verify other existing conditions which they have suspected, but had no way of proving. One flow survey, conducted in a waterflood project, confirmed their suspicions that the water being injected into the reservoir to displace oil was not doing its job efficiently because all of it was not going where it was supposed to go.

If the subsurface flowmeter can perform such valuable services, why haven't oil men had one before? Actually, the need for a reliable instrument of this type has long been recognized by oil producers, and numerous efforts have been made to develop one. At least two types have previously been put into commercial use, but neither met all of Humble's requirements. Consequently, several years ago, the Company's Production Research Division took on the task of developing an improved flowmeter—one that would do the job effectively.

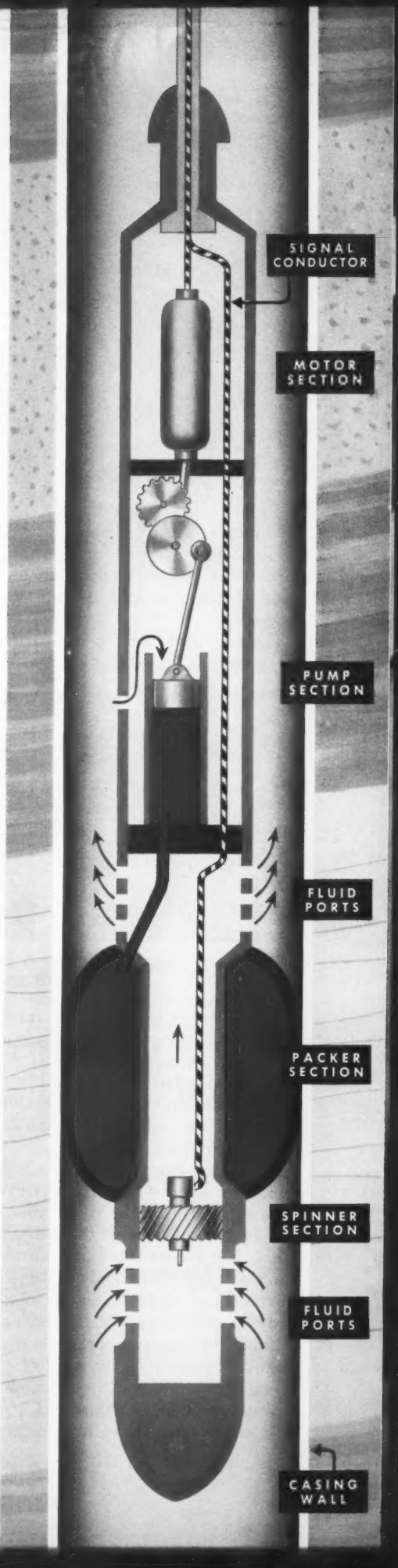
The men who worked on the project knew that they would have to devise a rugged and reliable metering device, tubular in shape and small enough in diameter to pass through two-inch tubing. Such a tool could be lowered into a producing well without interrupting production. They knew, too, that the most difficult part of their task would be to develop a suitable packer for the instrument. It was the packer which had been the greatest source of trouble in previous flowmeters, and it was to prove the biggest headache for Humble's development team.

It took years of designing, testing, redesigning, and retesting, before the research group came up with a flowmeter that met their requirements. The instrument, which went into operational service a little more than a year ago, is five feet long and only one and 11/16 inches in diameter. Inside that slim tube nestle a metering device, a pump, and an electric motor. Outside, snugly fitted about the shaft in a recessed section, is a rubber bladder which serves as the packer.

When the instrument is lowered into a well to the desired depth, the operator at the surface starts the electric motor, and the pump fills the packer with fluid from the well. As the packer expands, it seals off the casing above the metering section. Any flow of fluids or gas either up or down must then pass through the meter. Electrical pulses, generated by the flow through the meter, are transmitted through the wire line to recording instruments at the surface where they are translated into usable data on the rate and direction of flow.

After a reading has been made at one depth, the operator deflates the packer by reversing the electric motor, and the flowmeter is raised or lowered to a new level. By repeating this process, a well can normally be surveyed in a matter of a few hours.

Having developed and thoroughly tested this improved flowmeter, Humble has now licensed other firms to manufacture the instruments and to provide commercial subsurface metering service for the industry. It is still too soon to evaluate fully its effect on future producing operations, but there is little doubt that the information to be gained from subsurface flow surveys can help oil men perform more efficiently their task of getting more oil out of the ground at less cost.



Marketing Expands in Southern Arizona

This service station in Tucson is typical of 17 converted recently.

Humble's marketing operations have been expanded in the southern portion of Arizona with the Company's recent purchase of certain service station properties and equipment of the Southern Arizona Petroleum Company of Tucson.

Twelve Tucson service stations formerly served by the Southern Arizona Company were converted to Humble stations in January. Five additional stations in Tucson, and three located in towns east of that city on U. S. Highway 80, also were converted. The acquisition of these stations gives Humble its first outlets on that major east-west artery across the state.

Humble was host to members of Tucson's business community at a luncheon January 25. Several of the Company's executives, including Ray H. Horton, Humble Division president, were present to get acquainted with local business men, to explain marketing plans in the area, and to state Humble's corporate philosophy.

F. D. Hicks, former president of the Southern Arizona Company, is now a special representative for Humble.

The Company's initial move into the Arizona market was made last July, with the purchase of certain marketing properties of the Sahuaro Petroleum Company of Phoenix. Later, the Company completed an agreement with the Western Petroleum Company, with headquarters in Flagstaff, to distribute Humble products. This gave Humble its first retail outlets in northern Arizona. Addition of the outlets in the Tucson area gives the Company a total of 116 service stations and four bulk stations operating under the Humble sign in 28 towns and cities in the state.

Two New Headquarters Appointments Announced

Dr. Wilde

W. D. Seyfried

Appointments to two newly created positions in Humble Oil & Refining Company have been announced by President Morgan J. Davis, effective March 1.

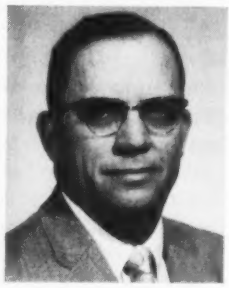
Dr. H. Dayton Wilde, formerly research coordinator of the Humble Division, joins the Company's headquarters organization as university relations counselor.

W. D. Seyfried, formerly head of Research and Development at the Humble Division's Baytown Refinery, was named manager of research for the Humble Company.

In his new post, Dr. Wilde will be responsible for fostering good relations with the colleges and universities from which Humble recruits many of its new employees. He will carry on a continuing study of the fellowship and scholarship programs and other aids to education supported by Humble, and will make recommendations as to the most effective use of funds the Company spends on such projects. In addition, he will advise with faculty members on the curriculum needs of industry and will serve as liaison officer on special educational programs in science. Dr. Wilde, who holds B.S. and M.S. degrees from the University of Texas and a Sc.D. degree from Massachusetts Institute of Technology, joined Humble in 1927.

Mr. Seyfried, in his new post, will be responsible for coordination of all scientific research carried out by Humble. He will also be responsible for advising the Company's board in regard to available research programs, for formulating and recommending research policies and plans, and for evaluating research results in the light of the Company's needs and objectives. Mr. Seyfried has been with Humble since 1938, when he received his B.S. degree in chemistry from Vanderbilt University.

Edwards Named Jersey Assistant Controller



J. O. Edwards

J. O. Edwards, administrative services manager for the Production and Exploration Departments of Humble Division, has been appointed an assistant controller of Standard Oil Company (New Jersey). He will assume the new post May 1.

Mr. Edwards has been with Humble for 14 years. He held various accounting positions before being named assistant to the controller in 1955 and assistant controller in 1958. He has been in his present post for one year.

Also named as an assistant controller of Jersey Standard was J. G. Belcher, former assistant controller of International Petroleum Company, Ltd.

L. H. Thompson, assistant controller of the Humble Division, has been named to succeed Mr. Edwards when he leaves his present post.

Construction Starts on New Humble Building

Groundbreaking ceremonies for the new Humble Building in Houston were held February 16 with Morgan J. Davis, president of the Humble Company, turning the first spadeful of dirt.

Ray H. Horton, president of the Humble Division, served as master of ceremonies and also wielded a spade in the groundbreaking tradition.

Houston's Mayor Lewis Cutrer and Chamber of Commerce President Leon Jaworski took part in the event, which was attended by members of Humble's board of directors, the Humble Division's board of management, and a number of other employees and annuitants.

Shortly after the groundbreaking, crews of W. S. Bellows Construction Corporation began work on the excavation. The Bellows firm recently was awarded the contract for the foundation and subsurface work on the tower portion of the building. Earlier this year, the site was cleared by Tellepsen Construction Company.

The foundation and subsurface work is expected to be completed in about five months. Final plans and specifications for the main building and garage are now being prepared, and are expected to be ready for bidding during the second quarter of 1960.

Leon Jaworski Mayor Cutrer Morgan J. Davis Ray H. Horton

Top photo, David A. Womack (left), James E. Lyles with their Hobbs "Knight of the Road" awards. Lower photo, James D. Roling receives hat as extra award for his second citation.

Three Humble Drivers Win Hobbs Awards

Three truck operators in the Humble Division's Marketing Department received Hobbs "Knight of the Road" awards recently for unusual acts of courtesy on Texas highways.

James D. Roling, senior truck salesman at the Tyler Products Terminal, was cited for the second time in a year. His second award was for assisting at the scene of an accident on October 21, 1959, by calling an ambulance and administering first aid to the victims of the mishap. The earlier award was for a similar deed.

David A. Womack, a transport driver at the Houston Products Terminal, and James E. Lyles, formerly located in Houston and now a truck salesman at the Hearne Products Terminal, received awards for a joint rescue last summer of an injured man pinned under an overturned truck. The drivers used the power tailgate of a Humble truck to lift a utility company truck so they could remove the man. They also administered first aid.

Recent Retirements

HUMBLE PIPE LINE COMPANY

Name	Location	Date of Retirement	Years of Service
Almos L. Brown	Ingleside	February 26	33
Walter O. Hardy	East Texas Division	January 17	21
Omer P. Humble	Anahuac	January 9	36
Roy L. Mershon	East Texas Division	February 2	27
Winifred Sims	West Texas Division	December 1	17

PRODUCTION DEPARTMENT

Ancil M. Ferguson	Avery Island	January 15	27
Virgil H. Jones	London	January 7	36
Robin O. Teague	Tomball	February 2	29

BAYTOWN REFINERY

Joseph M. Altemore	Cat. Polymerization	February 1	38
Hobart O. Buckels	Railroad	February 1	31
Vertner W. Carson	Light Ends	February 1	39
Earnest L. Jordan	Opers. Services Gen.	December 16	25
Herbert V. Plagens	Machine Dept.	January 5	23
Eddie D. Powell	Hydrodesulphurization	January 10	26

HOUSTON OFFICE

Helen Arnim	Purchasing	January 15	26
Esther W. Baebel	Employee Relations	February 4	37
R. N. Dyer	Employee Relations	November 3	39
Clyde J. Foley	General Services	November 28	30
Louis G. Schupp	Dinning Room	February 2	24

MARKETING DEPARTMENT

William O. Sweasey	Southwest Texas Div.	January 13	30

LAW DEPARTMENT

Ellis Barnes	Louisiana	January 5	35

Refinery Has Safest Year

Employees at Baytown refinery made 1959 the safest year in the plant's history. There were only seven disabling injuries during the year, making the frequency rate .72 accidents for each million manhours worked.

The best former record at Baytown was set in 1953, when 11 disabling injuries and a frequency rate of .94 were recorded.

In addition to the new over-all record attained, several employee groups chalked up significant records in safety. In April, employees of the Light Ends groups celebrated a total of 2,594,625 manhours without a disabling injury. Not one employee of that department has had a lost-time accident since 1951. The Light Ends groups include employees of Light Ends Recovery, Light Ends Fractionating, and Alkylation.

Another outstanding record was celebrated by Central Shop employees who in November completed one million manhours of work without a disabling injury, the longest time the combined groups in that building have worked without any member being injured. About 350 people set the record.

Employees in the Fire Equipment Department recently completed 33 years of fire fighting and other emergency service without a single disabling injury to a member of the department. From January 1, 1927, when it was organized, until the first day of this year, not one of the department's 25 employees missed a day of work because of a disabling injury.

C-Y-I Program Sets Record

A total of 886 employees received cash awards in 1959 for work improvement suggestions and inventions they submitted through Humble's Coin-Your-Ideas program. The awards they collected totalled $43,250.

A total of 1,666 ideas were submitted during the year, more than ever before in the program's 29-year history. The rate of acceptance during 1959 was 43 out of every 100 ideas submitted.

Deaths

Employees: Clarence F. E. Compton, 52, chief operator at Baytown Refinery, on January 13; Lorenze C. Dunn, 26 reproduction operator in General Services in the Houston Office, on December 11; Francis M. Ford, 53, district gauger, Humble Pipe Line Company at Caprock District, on December 7; John R. Deen, 59, assistant division chief clerk, Humble Pipe Line Company, North Texas Division Office, on January 15.

Willie Eagleton, 48, lift truck driver at Baytown Refinery, on January 12; Johnny S. Haining, 52, truck driver in Pipe Line, Southwest Texas Division Field, on December 16; Otis H. Henley, 64, compressor plant operator and gauger at Avery Island, on January 6; John R. McGee, 52, assistant mechanical foreman Humble Pipe Line Southern Division at Anahuac, on December 20; Ray Mathews, 49, gas plant engineer first at Imogene, on January 4.

Richard E. Morgan, 46, electrician at Baytown Refinery, on January 21; William T. Myers, 50, lease pumper-gauger at Hawkins District, on November 25; Robert L. Peterson, 54, senior landman in Exploration in Southwest Texas, on January 8; Mable H. Poore, 43, janitress at Baytown Refinery on December 5; Benjamin W. Rogers, 46, production derrickman at London District, on December 30; Exa H. Webb, 40, secretary in Humble Pipe Line Communications Division in the Houston Office, on December 26.

Annuitants: Thomas E. Bell, 68, former lumber yard foreman first at Baytown Refinery, on November 29; Robert R. Cates, 58, former chief operator at Baytown Refinery, on December 3; Holly O. Clark, 78, former engineer at Humble Pipe Line Truscott Station, on January 24; Frederick J. Fowle, 73, former district gauger Humble Pipe Line Hull District, on December 29.

Charles Franklin, 64, former terminal gauger for Humble Pipe Line at Baytown, on December 31; Phillip A. Garner, 59, former pipe liner in the Southern Division, on December 20; Page Havard, 62, former lease pumper-gauger at Tomball District, on November 27; Joseph H. Ivey, 60, former maintenance man at the Specialty Products Manufacturing and Fuel Oil Terminal in Houston, on January 9.

Stephen A. Johnson, 76, former pipe liner at Comyn Station, on December 17; Charlie M. Knight, 74, former machinist first at Baytown Refinery, on December 21; Thomas A. Murphy, 69, former division manager of Specialty Products Manufacturing, Sales, on December 12; Thomas P. Smith, 70, former instrument repairman at Baytown Refinery, on January 13.

Doc Gilford Taylor, 77, former Reclamation Shop foreman at Baytown Refinery, on January 19; Vernard V. Webster, 72, former pipe machine operator at Baytown Refinery, on December 27; William M. White, 64, former watchman at the Houston Bulk Station, on November 26.

The Humble Way

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P. O. Box 2180, Houston 1, Texas

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Research engineers examine intricate mechanism of subsurface flowmeter at well site. Valuable new tool was developed by Humble's Production Research Division after several years of work.

The Cover Painting

Although Choupique Bend is a mythical place which exists only in the imagination of the artist, this scene typifies the colorful bayou country of southern Louisiana. Robert M. R. Peale, who painted this watercolor as a spare-time art project, is a Humble employee, supervising draftsman in the Production Department at New Orleans. The painting is one of more than 100 works exhibited by employees and wives and husbands of employees in the Fifth Annual Invitation Exhibit of the Humble Club Art Group in Houston last October. For other examples of the work of these spare-time artists, see the center section of this issue.